In The Claims:

Please cancel claims 1-10 without prejudice.

Please add the following new claims 11-22:

11. An electrode assembly for sensing and ablating body tissue, comprising:

an expandable and collapsible structure having an electrode formed thereon, the electrode configured to sense electrical events in the body tissue and ablate the body tissue.

12. An electrode assembly according to claim 11, wherein the electrode comprises a conductive material substantially covering an exterior surface of the structure.

13. An electrode assembly according to claim 12, wherein the conductive material is applied to the exterior surface of the structure by ion beam assisted deposition.

14. An electrode assembly according to claim 11, wherein the structure includes an exterior surface having formed thereon a number of spaced apart conductive zones that act as individual electrodes.

15. An electrode assembly according to claim 14, wherein the spaced apart conductive zones comprise a conductive material applied by ion beam aided deposition.

16. An electrode assembly for sensing and ablating body tissue, comprising:

an expandable and collapsible body having an outer surface with an electrically conductive material that occupies substantially all of the outer surface so that the body acts as an individual sensing and ablating electrode.

17. An electrode assembly according to claim 16, wherein the electrically conductive material is applied by ion beam assisted deposition.

18. An electrode assembly for sensing and ablating body tissue, comprising:

an expandable and collapsible body having an outer surface with a number of spaced apart conductive zones configured to sense electrical events in the body tissue and ablate the body tissue.

19. An electrode assembly according to claim 18, wherein the spaced apart conductive zones comprise a conductive material applied by ion beam assisted deposition.

20. An electrode assembly for sensing body tissue, comprising:

an expandable and collapsible body, the body having an exposed outer surface, the outer surface substantially covered with an electrically conductive coating, whereby the body acts as an individual sensing electrode.

21. An electrode assembly according to claim 20, wherein the electrically conductive coating is applied using ion beam assisted deposition.

22. A method for constructing an electrode assembly, the electrode assembly configured to transmit electrical energy to body tissue, comprising:

providing an expandable and collapsible structure, and

applying an electrically conductive coating to the structure using ion beam aided deposition.